



AF/18  
Docket No.  
2107 (FJ-98-4)

## TRANSMITTAL OF APPEAL BRIEF (Large Entity)

Initial Application Of: Galyn A. Schulz

Serial No.	Filing Date	Examiner	Group Art Unit
09/686,210	October 11, 2000	R.L. Yan	2854

Invention: APPARATUS AND METHODOLOGY FOR EMBOSsing FIBROUS WEBS CONTAINING  
CONTAMINANTS

### TO THE COMMISSIONER FOR PATENTS:

Transmitted herewith in triplicate is the Appeal Brief in this application, with respect to the Notice of Appeal filed on November 14, 2003

The fee for filing this Appeal Brief is: \$330.00

- A check in the amount of the fee is enclosed.
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Signature

Dated: December 19, 2003

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

Galyn A. Schulz : Examiner: R.L. Yan  
U.S. Serial No. 09/686,210 : Group Art Unit: 2854  
Filed: October 11, 2000 :  
Docket No. 2107 (FJ-98-4) :  
For: APPARATUS AND METHODOLOGY :  
FOR EMBOSsing FIBROUS WEBS :  
CONTAINING CONTAMINANTS :  
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BRIEF ON APPEAL

Sir:

Applicant submits herewith, in triplicate, its *Appeal Brief* in the above-noted United States Patent Application. This *Appeal* is from the *Final Rejection* of July 21, 2003. A *Notice of Appeal* was submitted on November 14, 2004. Please charge the fee for the *Brief*, as well as any other fees due in this case to our Deposit Account No. 50-0935. If any extensions of time are required, please consider this paper a *Petition* therefore and charge our account as aforesaid.

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## 1. REAL PARTY IN INTEREST

Fort James Corporation, 1650 Lake Cook Road, Deerfield, Illinois 60015, a subsidiary of Georgia-Pacific Corporation is the real party in interest in this patent application. The *Assignment* was recorded at Reel 011534 / Frame 0508 on October 10, 2000.

## 2. RELATED APPEALS AND INTERFERENCE

There are no related appeals or interferences known to Applicant or its legal representatives which will affect or be affected by or having a bearing on the Board's decision in this case.

## 3. STATUS OF CLAIMS

Claims 1-5, 7-13 and 17-20 are pending in this application. A complete listing of the *Claims on Appeal* is provided in Appendix A hereto.

## 4. STATUS OF AMENDMENTS

All amendments have been entered; no amendments have been filed subsequent to the *Final Rejection* of July 21, 2003.

## 5. SUMMARY OF INVENTION

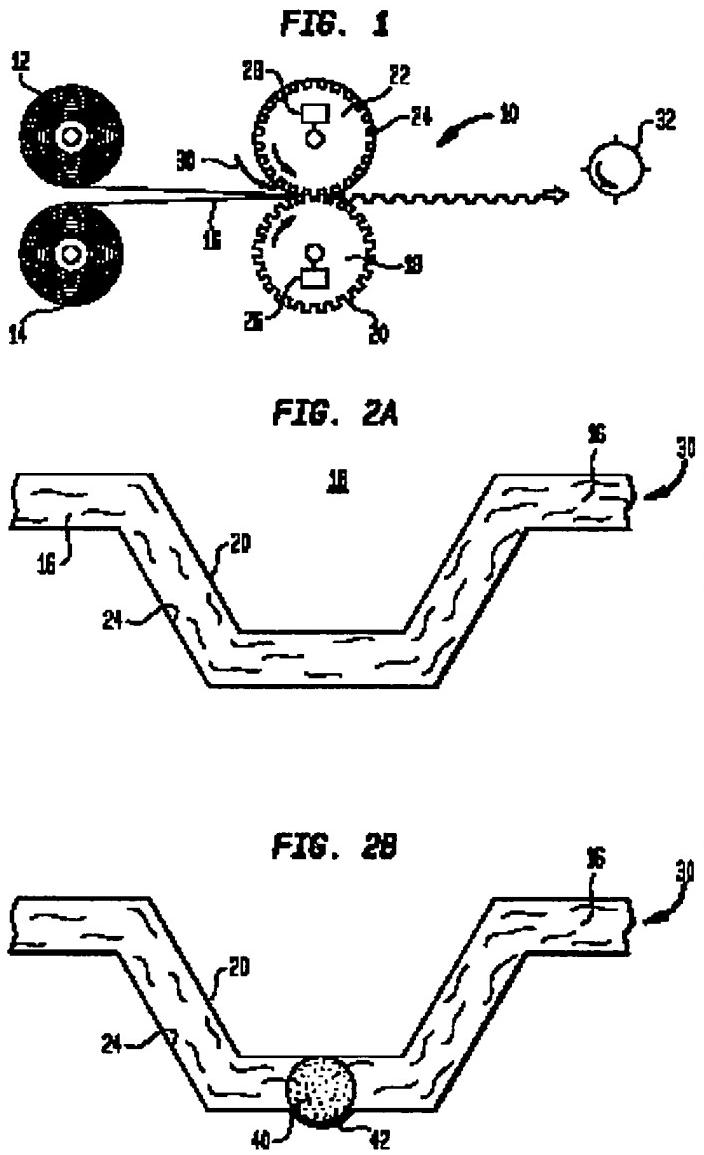
The present invention relates to an improved method of embossing paper tissue and towel, advantageously such products **incorporating recycle pulp containing contaminants** and apparatus therefor. The improved system has, in preferred embodiments, a hard roller **with a Shore A hardness of at least about 90** and a patterned roller with a **Shore A hardness of 40-65**. Claim 1 is illustrative:

A method for embossing a fibrous web incorporating recycled pulp containing contaminants to improve the bulk and softness of the web by passing the web through a nip formed by a pair of rotating rollers, wherein the contaminants will not damage the rollers, the method comprising:

- a) providing a first embossing roller having an outer surface, said outer surface having a plurality of male protuberances thereon corresponding to a desired embossed pattern;
- b) providing a second embossing roll having an outer surface having a plurality of female recessed portions which are matched to the male protuberances of the first roll;
- c) wherein one of said first and second embossing rollers has a Shore A hardness of 40-65 and the other roller has a Shore A hardness of at least about 90; and
- d) placing the rolls in contact to form a nip between the rolls, with the protuberances of the first roll entering the recesses of the second roll as the rolls rotate together; and passing a fibrous web through the nip formed by the rolls to emboss the web wherein the roller having the Shore A hardness of 40-65 will deform if any contaminants are encountered in the fibrous web such that a fibrous web including recycled pulp containing contaminant may be embossed without causing excess wear or damage to the embossing rollers.

*Note*, also, the text at page 7, lines 14-26, as well as **Figures 1-2b** reproduced below:

**Figures 2a and 2b** illustrate nip 30 between rollers 18, 22 as they act on web 16. In **Figure 2a** the portion of web shown 16 is free of any contaminants, it is seen than web 16 is embossed between the protuberances 20 of roller 18 and the recesses of roller 24 as web 16 is deflected therebetween, with the gap "a" defined as the distance between rollers 18, 22. In **Figure 2b** the portion of web shown 16 includes a contaminating particle 40, such as a particle of glue or plastic, it is seen that web 16 is again deflected between the protuberances 20 of roller 18 and the recesses of roller 24, however particle 40, which may be non-compressible, will also be lodged between protuberance 20 and recess 24. However, as roller 22 is formed from deformable material a temporary recess 42 will be formed in recess 24 of roller 22 which permits particle 40 to pass without damaging rollers 18, 22. If both rollers were formed from harder material contaminants would easily damage, or become lodged in, the rollers.



## 6. ISSUES

The claims in this case were rejected on the basis of obviousness only over United States Patent No. 5,269,983 to *Schulz* (inventor herein) in view of United States Patent No. 5,215,617 to *Grupe*. The issues are thus whether these references make out a *prima facie* case of obviousness and if so, whether sufficient evidence of nonobviousness has been submitted.

## 7. GROUPING OF CLAIMS

For the purposes of this Appeal:

Claims 1-4 and 13 stand or fall together;

Claims 5-8 stand or fall together;

Claim 9 is independently patentable;

Claims 10-12 stand or fall together; and

Claims 17-20 stand or fall together for the reasons stated herein.

## 8. ARGUMENT

In connection with this application, the inventor, Galyn Schulz, found that an embossing station including a patterned hard roll with a hardness of about 90 or above and a patterned roll having a Shore A hardness of 40-65 was unexpectedly resistant to damage by foreign objects\*. As such, the method and apparatus of the invention are particularly useful for embossing tissue and towel made from recycle furnish containing contaminants as is claimed.

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\*Note that Claims 10-12 differ somewhat.

Neither reference teaches or suggests the advantages of the invention, as was readily acknowledged by the Examiner in an Office Action dated August 30, 2002:

Even though neither Schulz nor Grupe discusses the problems associated with processing recycled fiber, one of ordinary skill in the art would have known that the embossing machine as taught by Schulz and Grupe is well capable of processing fibrous web containing recycled pulp without suffering excessive wear due to the contaminants in the pulp simply because this embossing machine having the steel and rubber embossing roller pair with their respective Shore A hardness would tolerate the contaminants in the recycled pulp the same way as would the embossing machine of the present invention.

Office Action, August 30, 2002, pp. 3-4. Inasmuch as the references do not even suggest the problem, much less a solution, the factual basis required by *In re Lee* to establish obviousness, *prima facie*, has not been met. In particular, the motivation to combine in the manner urged by the Examiner must appear in the references:

In other words, the Board must explain the reasons one of ordinary skill in the art would have been motivated to select the references and to combine them to render the claimed invention obvious."); *In re Fritch*, 972 F.2d 1260, 1265, 23 USPQ2d 1780, 1783(Fed. Cir. 1992) (the examiner can satisfy the burden of showing obviousness of the combination "only by showing some objective teaching in the prior art or that knowledge generally available to one of ordinary skill in the art would lead that individual to combine the relevant teachings of the references").

With respect to Lee's application, neither the examiner nor the Board adequately supported the selection and combination of the Nortrup and Thunderchopper references to render obvious that which Lee described. The examiner's conclusory statements that "the demonstration mode is just a programmable feature which can be used in many different device[s] for providing automatic introduction by adding the proper programming software" and that "another motivation would be that the automatic demonstration mode is user friendly and it functions as a tutorial" do not adequately address the issue of motivation to combine. This factual question of motivation is material to patentability, and could not be resolved on subjective belief and unknown authority. It is improper, in determining whether a person of ordinary skill would have been led to this combination of references, simply to "[use] that which the inventor taught against its teacher." *W.L. Gore v. Garlock, Inc.*, 721 F.2d 1540, 1553, 220 USPQ 303, 312-13 (Fed. Cir. 1983). Thus the Board must not only assure that the requisite

findings are made, based on evidence of record, but must also explain the reasoning by which the findings are deemed to support the agency's conclusion.

Deferential judicial review under the Administrative Procedure Act does not relieve the agency of its obligation to develop an evidentiary basis for its findings. To the contrary, the Administrative Procedure Act reinforces this obligation. See, e.g., Motor Vehicle Manufacturers Ass'n v. State Farm Mutual Automobile Ins. Co., 463 U.S. 29, 43 (1983) ("the agency must examine the relevant data and articulate a satisfactory explanation for its action including a 'rational connection between the facts found and the choice made.'") (quoting *Burlington Truck Lines v. United States*, 371 U.S. 156, 168 (1962)); *Securities & Exchange Comm'n v. Chenery Corp.*, 318 U.S. 80, 94 (1943) ("The orderly function of the process of review requires that the grounds upon which the administrative agency acted are clearly disclosed and adequately sustained.").

*In re Lee*, 61 USPQ2d 1430, 1434 (CAFC 2002)

If needed, further support is found in the MPEP, noted below:

The present invention as claimed in Claims 1-4, 10-12 and 17-20 is specifically directed to a method of processing recycle fiber containing contaminants (including stickies in many claims) and is thus patentable over the cited references which do not suggest the damage problem solved by the invention. The MPEP specifically provides that "ordinary skill in the art" cannot be a sufficient basis to reject claims.

**FACT THAT THE CLAIMED INVENTION IS WITHIN THE  
CAPABILITIES OF ONE OF ORDINARY SKILL IN THE ART IS  
NOT SUFFICIENT BY ITSELF TO ESTABLISH *PRIMA FACIE*  
OBFVIOUSNESS**

A statement that modifications of the prior art to meet the claimed invention would have been "well within the ordinary skill of the art at the time the claimed invention was made" because the references relied upon teach that all aspects of the claimed invention were individually known in the art is not sufficient to establish a *prima facie* case of obviousness without some objective reason to combine the teachings of the references. *Ex parte Levengood*, 28 USPQ2d 1300 (Bd. Pat. App. & Inter. 1993). See also *In re Kotzab*, 217 F.3d 1365, 1371, 55 USPQ2d 1313, 1318 (Fed. Cr. 2000) (Court reversed obviousness rejection involving technologically simple concept

because there was no finding as to the principle or specific understanding within the knowledge of a skilled artisan that would have motivated the skilled artisan to make the claimed invention); Al-Site Corp. v. VSI Int'l Inc., 174 F.3d 1308, 50 USPQ2d 1161 (Fed. Cir. 1999) (The level of skill in the art cannot be relied upon to provide the suggestion to combine references.).

MPEP §2143.01, 4<sup>th</sup> heading

*Grupe* '617 in fact teaches away from the present invention in that it states both rolls can be rubber. *Note Grupe* '617 at Col. 2, lines 53-56:

The first matched embossing roll is a steel roll having male embossing elements 5 which protrude from the surface of the embossing roll. The first matched embossing roll can be any material, however, including rubber.

Indeed, *Grupe* '617 specifically provides that "any combination of steel/rubber or rubber/rubber matched embossing rolls are contemplated." *Grupe* '617 at Col. 2, lines 4-9.

Furthermore, neither reference teaches the 40-65 range of Shore A hardness appearing in the claims. *Grupe* '617 discloses a Shore A hardness of 50-80, Col. 2, line 12 thereof, which again teaches away from the 40-65 range appearing in all of the independent claims.

All claims should be allowed because the references do not support, *prima facie*, a conclusion of obviousness. In fact, the *Grupe* '617 reference teaches away from the claimed invention with respect to Claims 1-9, 13 and 17-20 in two material respects -- (1) that a hard roll is not required and (2) that a range of hardness for a rubber roll therein is 50-80 Shore A. Both of these taught features are at odds with the claimed subject matter. It is noted in *In re Geisler* 43 USPQ2d 1362, 1365 (CAFC 1997) that even a *prima facie* case of obviousness is rebutted if it is shown that the art teaches away in any material respect. Also noted in *Geisler* is that the existence of unexpected properties in the range claimed rebut a *prima facie* case. *Geisler* at 43 USPQ2d 1365.

In this application, Galyn Schulz, a highly experienced individual has stated in his *Declaration* filed in June, 2002 that the claimed process was surprisingly robust with respect to contaminants; *note* paragraphs 5-8 of the June, 2002 *Declaration*:

5. That he has personally observed the operation of an embossing station such as described in Claim 1 above; that is, a roll having a Shore A hardness of greater than 90 was matched with an engraved rubber roll having a Shore A hardness of between 40 and 65, and the rolls were biased against each other and used to emboss paper sheet. More specifically, a female sleeve was engraved on a sleeve of Shore A 100 hardness and matched with a male roll made with a sleeve of a soft rubber material having a Shore A hardness of 60.
6. That during such operation, various objects were purposely fed to the embossing nip to test its ability to pass contaminants without damage to the embossing station, including such objects as paper clips and coins.
7. That such objects fed to a conventional embossing nip would cause extensive damage to matched embossing rolls, a steel/steel matched set, for example; however, it was surprisingly found that neither paper clips nor coins damaged the embossing rollers when the method of the invention of the above-noted patent application was employed. Following is an excerpt from a research report detailing operation of the method of the invention of the above-noted patent application:

As part of the trial items such as a paper clip, a dime, and wadded paper were passed through the nip of the 100/60 durometer sleeves. The items were taped to the emboss roll and ran through the emboss nip five times. The emboss sleeves were examined with a 40X microscope and no damage could be detected on either the 100 durometer female sleeve or the 60 durometer male sleeve. The emboss gap was set at 26 mils which was the emboss gap required to achieve the targeted 1-ply tissue attributes. Also during the set up of the 100/60 durometer emboss sleeves there were some set up errors made, which results in the rolls being run mismatched at a supposed 0.010" emboss gap. Neither the 100 durometer female sleeve nor the 60 durometer male sleeve was damaged.

8. That despite his more than twenty-five (25) years of experience with embossing, he found it surprising that the method of the invention could be employed to withstand contaminants such as coins fed to the nip without damage to the embossing rollers. Such damage is difficult (as well as expensive) to repair and leads to significant down time of expensive machinery.

Even if a *prima facie* case of obviousness had been made in this application, the *Declaration* evidence and test data submitted render the claimed subject matter patentable.

As was noted in *In re Soni*, 34 USPQ2d 1684, 1687 and following (CAFC 1995), uncontradicted Declaration evidence of unexpected results suffices for purposes of nonobviousness:

Mere improvement in properties does not always suffice to show unexpected results. In our view, however, when an applicant demonstrates substantially improved results, as Soni did here, and states that the results were unexpected, this should suffice to establish unexpected results in the absence of evidence to the contrary. Soni, who owed the PTO a duty of candor, made such a showing here. The PTO has not provided any persuasive basis to question Soni's comparative data and assertion that the demonstrated results were unexpected. Thus, we are persuaded that the Board's finding that Soni did not establish unexpected results is clearly erroneous.

The cases cited by the dissent are not to the contrary. Neither De Blauwe, nor Wood, nor Lindner requires a showing of unexpectedness separate from a showing of significant differences in result. Nor does Merck, which involved compositions understood to differ only in "a matter of degree." Those are not the facts here, where substantially improved properties were shown. Given a presumption of similar properties for similar compositions, substantially improved properties are *ipso facto* unexpected. The difficulty postulated by the dissent in distinguishing substantial from insubstantial improvement is no greater than the PTO and the courts have encountered, successfully, for many years in making judgments on the question of obviousness. It is not unworkable; it is simply the stuff of adjudication. Nor does it change established burdens of proof. The PTO here established a *prima facie* case, the applicant responded to it with a showing of data, and the PTO made an inadequate challenge to the adequacy of that showing.

Turning to the Claim groupings noted above, Claims 1-4 and 13 specifically require recycle furnish as part of the claimed method. Recycle furnish is not suggested in the references of record and these claims are believed allowable for this reason especially in view of the embossing roll hardness limitations.

Claims 5-9 are apparatus claims and do not contain the recycle fiber limitation noted immediately above and are believed allowable because of the embossing roll hardness

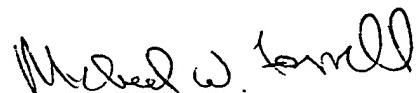
limitations. Claim 9 recites a narrower range of Shore A hardness and is allowable for this additional reason.

Claims 10-12 relate to a method of modifying an existing apparatus by replacing an existing roll with a roll having a Shore A hardness of 40-65. As noted in the specification at page 8, line 11 and following, this provides the additional advantage of extending the useful life of embossing rolls. Accordingly, these claims are patentable for these reasons, it being noted that Claims 10-12 do not require a harder roll but relate instead to modifying an apparatus.

Finally, Claims 17-20 specifically require that the recycle pulp centering web contains glue particles or "stickies". The art cited does not remotely suggest that such items cause problems with conventional embossing systems, nor that the problem can be solved with a roll having a Shore A hardness of 40-65. Claims 17-20 are allowable for the additional reason of this recitation.

All claims should be allowed.

Respectfully submitted,



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December 19, 2003

CLAIMS ON APPEAL

1. A method for embossing a fibrous web incorporating recycled pulp containing contaminants to improve the bulk and softness of the web by passing the web through a nip formed by a pair of rotating rollers, wherein the contaminants will not damage the rollers, the method comprising:
  - a) providing a first embossing roller having an outer surface, said outer surface having a plurality of male protuberances thereon corresponding to a desired embossed pattern;
  - b) providing a second embossing roll having an outer surface having a plurality of female recessed portions which are matched to the male protuberances of the first roll;
  - c) wherein one of said first and second embossing rollers has a Shore A hardness of 40-65 and the other roller has a Shore A hardness of at least about 90; and
  - d) placing the rolls in contact to form a nip between the rolls, with the protuberances of the first roll entering the recesses of the second roll as the rolls rotate together; and passing a fibrous web through the nip formed by the rolls to emboss the web wherein the roller having the Shore A hardness of 40-65 will deform if any contaminants are encountered in the fibrous web such that a fibrous web including recycled pulp containing contaminant may be embossed without causing excess wear or damage to the embossing rollers.
2. The method of claim 1, wherein the step of providing a second roller includes utilizing a laser to form the recesses in the second roll, by removing portions of the material from the outer surface.
3. The method of claim 1, wherein the roller having a Shore A hardness of 40-65 comprises material selected from the group consisting of natural rubber, synthetic rubber and plastic.
4. The method of claim 1, wherein the roller having a Shore A hardness of at least about 90 is constructed of steel.

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5. Apparatus for embossing a fibrous web incorporating recycled pulp containing contaminants so that the contaminants will not damage the rollers, comprising:
  - a) a first rotating embossing roller having an outer surface, said outer surface having a plurality of male protuberances thereon corresponding to a desired embossed pattern;
  - b) a second rotating embossing roller having an outer surface having a plurality of female recessed portions which are matched to the male protuberances of the first roller;
  - c) wherein one of said first and second embossing rollers have differing hardnesses; and
  - d) wherein the first and second rollers are disposed to form a nip between the rolls, with the protuberances of the first roll entering the recesses of the second roll as the rolls rotate together; to permit the fibrous web through the nip formed by the rollers, wherein the roller having the lesser hardness will deform upon contact with a contaminant in the fibrous web wherein one of said first and second embossing rollers has a Shore hardness of 40-65 and the other roller has a Shore A hardness of at least about 95 such that a fibrous web including recycled pulp containing contaminants may be embossed without causing excess wear or damage to the embossing rollers.
7. The apparatus as claimed in claim 6 wherein the roller having a Shore A hardness of at least about 95 is constructed of steel.
8. The apparatus as claimed in claim 6 wherein the roller having a Shore A hardness of 40-65 comprises material selected from the group consisting of natural rubber, synthetic rubber and plastic.
9. The apparatus as claimed in claim 5 wherein one of said first and second embossing rollers has a Shore A hardness of about 60-65.

10. A method to update paper embossing machinery having matched pairs of embossing rollers to enable the machinery to accommodate recycled pulp that contains contaminants, comprising the steps of:
  - a) providing a embossing roller comprising material having a Shore A hardness of 40-65;
  - b) utilizing one of each pair of embossing rollers to produce a matched opposite roller from the embossing roller of material having a Shore A hardness of 40-65; and
  - c) replacing one of each matched pair of embossing rollers with the roller produced from material having a Shore A hardness of 40-65 such that a fibrous web including recycled pulp containing contaminants may be embossed without causing excess wear or damage to the embossing rollers.
11. The method of claim 10, wherein the step of producing a matched roller includes utilizing a laser to removing portions of the material from the outer surface of the roller produced from material having a Shore A hardness of 40-65.
12. The method of claim 10, wherein the roller having a Shore A hardness of 40-65 comprises material selected from the group consisting of natural rubber, synthetic rubber and plastic.
13. A method for embossing a fibrous web incorporating recycled pulp containing contaminants to improve the bulk and softness of the web by passing the web through a nip formed by a pair of rotating rollers, wherein the contaminants will not damage the rollers, the method comprising:
  - a) providing a first embossing roller having an outer surface, said outer surface having a plurality of male protuberances thereon corresponding to a desired embossed pattern;
  - b) providing a second embossing roll having an outer surface having a plurality of female recessed portions which are matched to the male protuberances of the first roll;

- c) wherein at least one of said first and second embossing rollers is a laser engraved roller and has a Shore A hardness of from about 40 to about 65; and
  - d) placing the rolls in contact to form a nip between the rolls, with the protuberances of the first roll entering the recesses of the second roll as the rolls rotate together; and passing a fibrous web through the nip formed by the rolls to emboss the web wherein the roller having the Shore A hardness of from about 40 to about 65 will deform if any contaminants are encountered in the fibrous web such that a fibrous web including recycled pulp containing contaminants may be embossed without causing excess wear or damage to the embossing rollers.
17. The method according to Claim 1, wherein the contaminants in the recycled pulp include stickies.
18. The apparatus according to Claim 5, wherein the apparatus is thereby adapted to emboss a web including recycled pulp containing stickies.
19. The method according to Claim 10, wherein the recycled pulp contains stickies.
20. The method according to Claim 13, wherein the recycled pulp contains stickies.